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Observations made during the Eclipse of June 6, 1872. By A. Nursing Row, Esq.

(*From a Letter to Dr. Huggins.*)

I have the pleasure to enclose a copy of the paper printed by me, with the particulars of the solar eclipse of the 6th instant, for the use of my friends and the community, European and native, in the neighbourhood of Vizagapatam. I am sorry to say, that we were denuded *in toto* of the means to observe the first contact, and the greatest phase, the clouds were so dense and threatening rain.

We were in despair until ten minutes to the last contact time, but then the Sun made his appearance from an aperture in the mass of clouds around him, and continued to do so until the last contact was observed most satisfactorily. The error of the prediction for the last contact, according to the observation, was +7 seconds.

The enclosed statement contains the observations of the barometer, the solar radiation, the humidity, &c. for every ten minutes during the eclipse.

The solar radiation observations were made with the black-bulb thermometer that was used the last solar eclipse-time—description of which was given in my last report,* 13th Dec. 1871.

The height of the instrument from the ground, and the character of the ground, are one and the same this time and last time.

The magnitude of the present eclipse is ·927, that of the last eclipse was ·629. With so much sheltering from the Sun's rays by the opaque body of the Moon at the greatest phase of the eclipse, and with those well-known rain-clouds—nimbus covering the whole sky, which will, no doubt, present an obstruction to the free passage of half the solar radiation—I surmised that the radiation thermometer would decrease more than it did at the greatest phase of the last solar eclipse, but it decreased 1°·5 less than it did last time. In addition to the vicissitudes of the season, which create more or less variation of the temperature, there may be various other causes for it.

In this discussion, I think, the altitude of the Sun must be considered. On the date of the last solar eclipse, 12th December, the apparent time of Sun-rising in this latitude was nearly $6^h\ 23^m$. On the 6th instant it was nearly $5^h\ 25^m$. This difference of time in rising compensates the difference of time in the greatest phase of the two eclipses, therefore there is no great variation of the altitudes.

At the nearest approach of the greatest phase last time, the column of the solar radiation thermometer decreased 1·1, but this

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* Pages 72 and 73, Vol. xxxii. No. 3, *Royal Astronomical Society's Monthly Notices.*

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time only ·5, notwithstanding the magnitude of the eclipse was so great as ·927. In the present case the humidity was apparently great. I wonder what else could cause the less decrease of the column, except the absence of clear sky, and the presence of clouds between the Sun's rays and the Earth, which may probably impede terrestrial radiation also.

Meteorological Observations taken during the time of the Eclipse, 6th June, 1872.

Hours.	Barometer reduced to 32°.	Dry bulb.	Wet bulb.	Humidity.	Solar radiation thermometer.	Kind of clouds.	Clear sky.	Direction of wind.
h m	inches	°	°	cents	°		cents	points
6 3	29·687	88	82	76	51	cu	60	S.
6 13	29·689	88	82	76	51·4	cu	20	S. by W.
6 23	29·695	88·4	82	76	52·4	cu	20	W.S.W.
6 33	29·695	88·2	82	76	51·6	cu	30	S.S.W.
6 44	29·697	88	81·5	74	51·2	cu	20	S.
6 43	29·699	88	81·5	74	50·5	cu	20	S.
7 3	29·699	88	81·5	74	50	N.	,,	S.
7 13	29·701	88	81·5	72	49·5	N.	,,	S.W.
7 23	29·705	87·8	81·4	76	50·5	N.	,,	S.
7 33	29·709	87·7	81·3	76	52·3	cu	20	S.
7 43	29·709	87·7	81	72	54	cu	20	S.W. by W
7 53	29·709	88	81·4	72	55·4	cu	20	S.W.
8 3	29·711	88	81·7	76	57·3	cu	30	S.W. by W.
8 13	29·715	88	81·8	76	59·3	cu	30	S.W. by W.
8 23	29·721	88	81·8	76	63	cu	50	S.W.
8 30	29·720	88·6	81·7	73	76	cu	50	W. by S.

Observations made during the Eclipse of June 6, 1872. By N. R. Pogson, Esq., Government Astronomer at Madras.

(*From a Letter to the Astronomer Royal.*)

I take the earliest opportunity of informing you of our results on the occasion of the annular eclipse of the Sun on the 6th.

Availing myself of your kind encouragement to make use of the Browning reflector, I got the Government to sanction the immediate erection of a sliding flat-roofed room, a dark room, and a printing room, over the transit-circle room, and got all completed just, and only just, in time. My son, assisted by Mr. F. Doderet, got nine photographs altogether—four during the important time. I enclose copies of six: No. 1, partial, before centre; 2, just as the ring was forming, when the coronal light,

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